

Java Language on .NET



Agenda

- **Product description**
- **Product Preview**
- **Availability**
- **Q & A**

Product Plan

- **Provide Java language on the .NET Platform**
- **Seamless upgrade path for Visual J++ Developers onto the .NET platform**
- **Java as a 1st class language in VS.NET**



Product Description

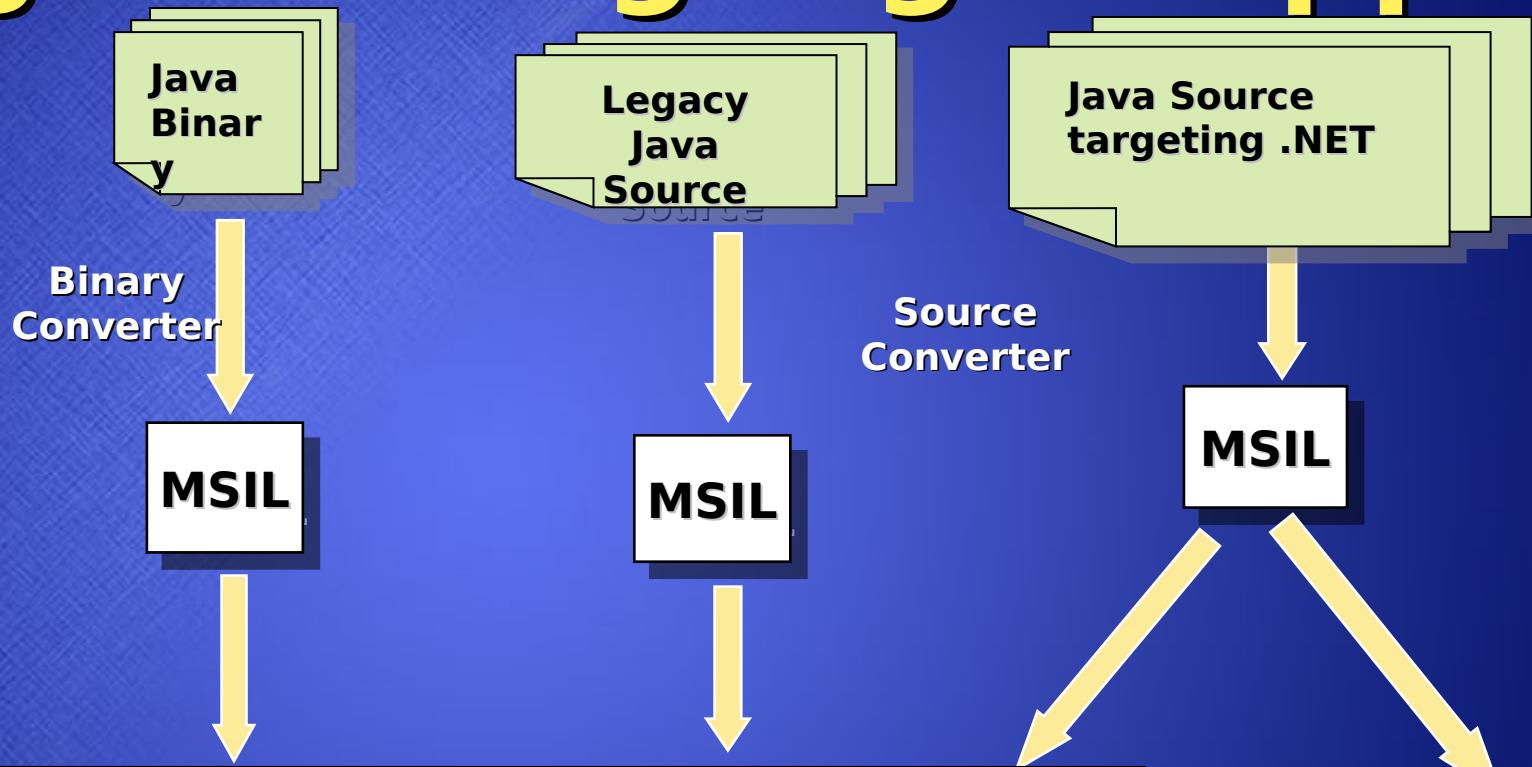
- **Java Language**
 - Core Java programming Language
 - Java language converter
- **Class libraries**
 - JDK 1.1.4 (AWT, JDBC, Security, No JNI, no RMI)
 - MS extensions for Windows (JavaCOM, WFC)
- **Java language IDE in VS.NET**



Java Language demo



Java Language Support



Subset of JDK
1.1.4 & VJ++ 6.0

Libraries

.NET Runtime

Win32

Java language converter

- Fully supports the Java language
 - Preserves language semantics
- Supports MS extensions for Windows
 - J/Direct, JavaCOM, Delegates etc.
- Fully supports consuming .NET Frameworks
 - CLS Compliant



.NET Language extensions

- To be CLS compliant
- Syntax extensions required for CLS
 - `ubyte`
 - `@attribute` - For attaching .NET attributes
- Support for consuming .NET constructs:
 - Properties, Events, Delegates, Value types, Enums

Using .NET framework - 1

- Properties - use property accessors

```
form.set_Text("Hello");  
form.get_Text();
```

- Delegates - Just create the delegate over a Java method

```
// EventHandler is a .NET Delegate  
myHandler = new EventHandler(OnClickOK)
```

- Events - use event accessors

```
okButton.add_Click(myHandler);  
okButton.remove_Click(myHandler);
```



Using .NET framework -

2 Attaching .NET attributes

```
/** @attribute WebMethodAttribute(true) */  
String GetStockQuote(String symbol)
```

- **Value types - Just use them as reference types**

```
DateTime dt = new DateTime();  
dt = DateTime.Parse("01/01/2002 12:00");  
System.Object obj = dt; // This boxes value type  
dt
```

- **Enumerators**

```
DayOfWeek friday = DayOfWeek.Friday;  
mySchedule.SetNonWorkingDay(friday);
```



Consuming .NET Frameworks

Demo



Java/COM and other extensions

J/Direct

- **@dll.import, @dll.struct, @dll.structmap etc.**
- **JavaCOM**
 - **@com.class, @com.interface, @com.method, @com.register etc.**
- **Delegates**
 - **delegate, multicast delegate**
- **Conditional compilation**
 - **#if, #else, #error etc**
 - **@conditional**

JavaCOM demo



JDK Class Libraries

- As per JDK 1.1.4 Specs
 - No JNI and RMI
- Packages
 - lang, io, net, util
 - awt
 - sql, datatransfer, beans, text

AWT

- **Windowless implementation of awt components**
- **Solid Imaging performance**

AWT demo

Binary Converter

- Converts statically existing Java byte code in .class format to a .NET assemblies (in MSIL format)
- Useful when Java source is not available
 - Third party Java libraries in .class format

Binary Converter Demo



Java language IDE in VS.NET

- **Project system**
 - Full VS.NET project system
 - Upgrade VJ6 projects
- **Language services**
 - Designers - ASP.NET Web Forms, Web Services
 - Class View, Object Viewer
 - Intellisense
- **Debugger**
 - Java language exceptions



.NET Designers Demo

**Web Forms
Web Service**



Debugger

- **.NET Debug Engine - Multi language debugging**
- **All features of VS.NET debugger are available to Java language programmers**
- **Full Support for Java language Exceptions**
- **Java language expression evaluator**
 - Locals
 - Watch Window

Debugger Demo

- Debugging in Java language
- Java language exceptions
- Cross language debugging

Availability

- Beta 1 in early Q3 of 2001
- Beta 2 in Q4 of 2001
 - Signup to the beta by visiting:
<http://msdn.microsoft.com/visualj/jump/default.asp>
- Ship final release in Q1 2002
- Pricing announced later
- Further information contact -
tgoodhew@microsoft.com

Summary

- Java Language on .NET platform
- Fully integrated into VS.NET - All .NET Designers
- Full support for .NET Frameworks
- Easy upgrade for VJ++ & Java-COM developers

Q & A

Microsoft[®]

Java language on .NET

- **Object Hierarchy semantics**
 - **Java.Lang.Object Vs. System.Object**
 - **Exceptions (Catch and Throw)**
 - **Arrays**
 - **System.String Vs. java.lang.String**
- **Language semantics**
 - **Scoping rules**
 - **throws clause and checked exceptions**
- **Instruction semantics**

PowerPoint Template

Subtitle color

- Select File/Save As
- Select File/Slide Setup choose On Screen Show
- See next slide for guidelines

Slide Guidelines

- Slides should emphasize key points
 - Limit to 6 lines per slides
 - Limit to 6 words per line
- Font, size, and color for text have been formatted for you in the Slide Master

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